ASKO

BUILT TO LAST LONGER

Service manual
Dishwasher - DW90

Service manual

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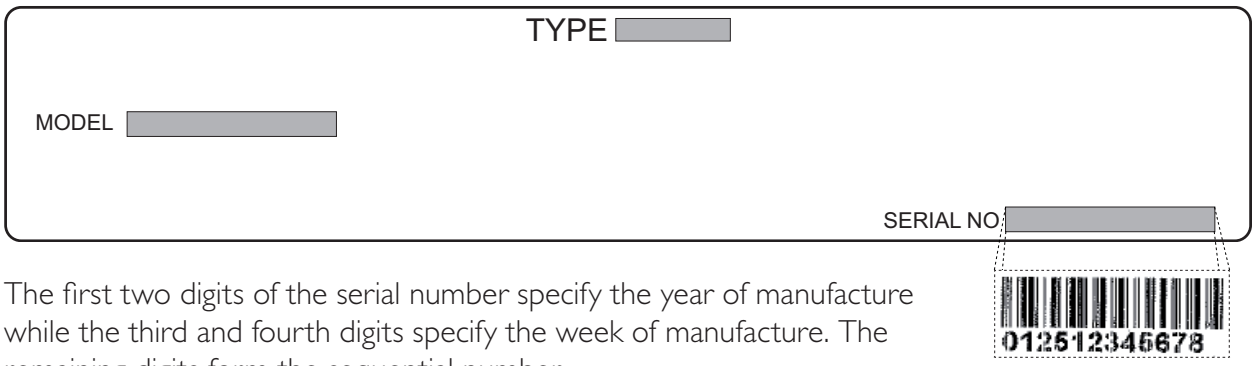
Updates

Rev	Date	Description	Initials
01	2011-04-15	First version	FH
02	2011-05-12	Front display 90.2, service menu 90.1 and 90.2 and also some minor text updates	FH
03	2011-05-27	90.1 OTHER included	FH
04	2011-06-08	Instruction for "Increased working space during service" updated	FH
05	2011-11-29	Updated wiring diagram and added information about Anti siphon	ISC
06	2012-02-02	Updated service menu for 90.2. Changed description how to set TDE & HWC.	AN
07	2012-03-16	Instructions updated for 90.2. Store program added.	EH
08	2012-04-23	Service menu for 90.2 updated. Description added for Total reset (TDE & HWC).	EH
09	2012-05-21	Information for Region settings updated.	EH
10	2012-09-06	Program flow description for the Daily wash program included.	EH

Introduction

You are holding the Service manual for the DW90 generation of dishwashers.

The DW90 dishwasher series is available in three different basic models, designated DW90.1, DW90.2 and DW90.3. In the *Types section*, we present the various panels found on each type, making it easy to identify the different machines. The different models are named differently in different markets. The type designation is most important when identifying a particular machine model. This information can be found on the serial number plate on the right of the inside of the door, where the machine's model designation is specified.



The first two digits of the serial number specify the year of manufacture while the third and fourth digits specify the week of manufacture. The remaining digits form the sequential number.

It should be easy to service a dishwasher. It is important that you, as a service technician, are afforded conditions that enable you to work in an efficient and satisfactory way. Our hope is that this service manual will prove a useful tool in your daily work.

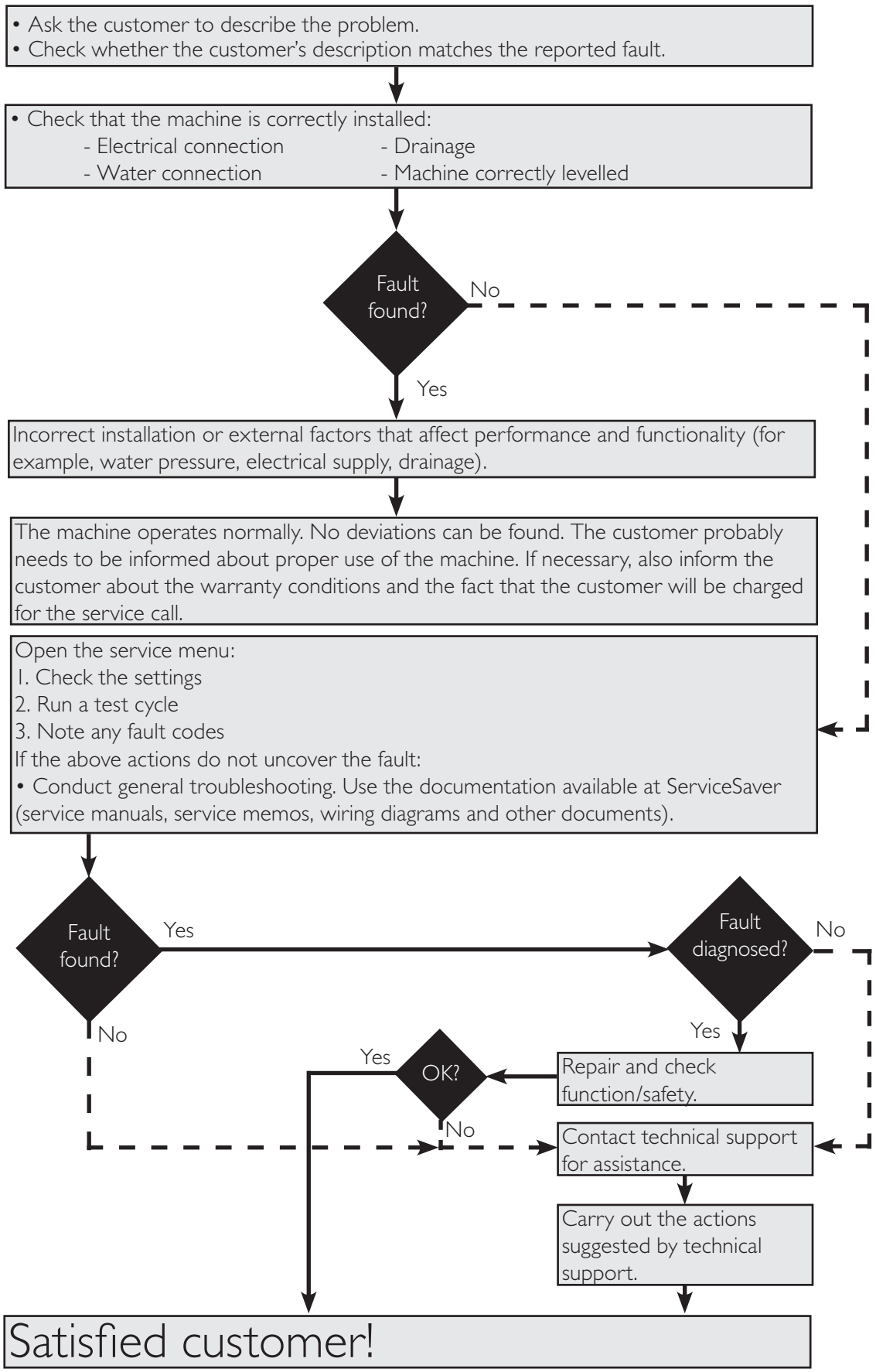
Asko Appliances AB
SE-534 82 Vara
Sweden

OPERATING INSTRUCTIONS

Always have the operating instructions for the machine available during service

Troubleshooting strategy

Troubleshooting is an important part of the service callout, and as such we have drawn up a troubleshooting strategy that describes, in broad terms and step by step, what you need to do to find and diagnose faults arising in our machines.


• Ask the customer to describe the problem.
• Check whether the customer's description matches the reported fault.
• Check that the machine is correctly installed:
- Electrical connection
- Drainage
- Water connection
- Machine correctly levelled
Fault found?
No
Yes
Incorrect installation or external factors that affect performance and functionality (for example, water pressure, electrical supply, drainage).
The machine operates normally. No deviations can be found. The customer probably needs to be informed about proper use of the machine. If necessary, also inform the customer about the warranty conditions and the fact that the customer will be charged for the service call.
Open the service menu:
1. Check the settings
2. Run a test cycle
3. Note any fault codes
If the above actions do not uncover the fault:
• Conduct general troubleshooting. Use the documentation available at ServiceSaver (service manuals, service memos, wiring diagrams and other documents).
Fault found?
Yes
No
Fault diagnosed?
No
Yes
OK?
Yes
No
Repair and check function/safety.
Contact technical support for assistance.
Carry out the actions suggested by technical support.
Satisfied customer!

Types

DW90.1 - BRAND ASKO

The machine has 6 set programs and 2, 3 or 5 options that can vary depending on the variant. The touch buttons and display are found on the front of the panel. The main power switch is on the top.

DW90.2

The machine has 9 set programs, but can be specified with up to 16 programs. The touch buttons and display are usually found on the top. Certain variants are supplied with a display on the front.

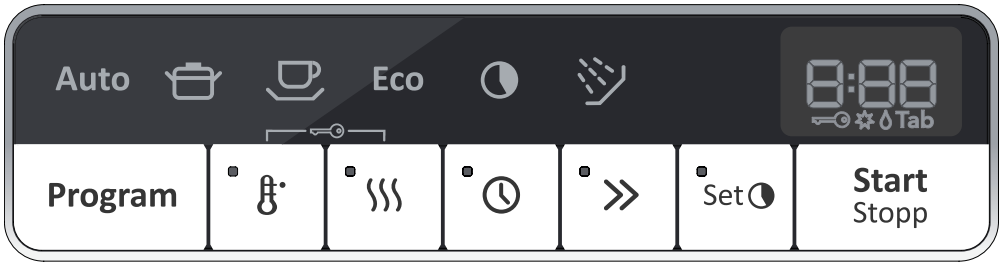
Display on the front

DW90.3

The machine has 16 set programs and the touch buttons and display are on the top. The number of options and settings vary depending on the specification of the machine.

DW90.1 - BRAND OTHER

The machine has 6 set programs and 2, 3 or 5 options that can vary depending on the variant. The touch buttons and display are found on the front of the panel. The main power switch is on the top.



Technical data

Height:	823-870 mm (32-1/4" to 35-1/2") = for 820 mm machines (XL) 863-910 mm (33-3/4" to 36") = for 860 mm machines (XXL)
Width:	596 mm (23-5/8")
Depth:	550 mm (22")
Weight (freestanding):	56 kg/59 kg (124 lbs/130 lbs) with water softener (XL) 57 kg/60 kg (126 lbs/132 lbs) with water softener (XXL)
Weight (integrated):	49 kg/52 kg (108 lbs/115 lbs) with water softener (XL) 50 kg/53 kg (110 lbs/117 lbs) with water softener (XXL)
Water pressure:	0.03–1.0 MPa (0.3–10 kp/cm^2) (4.2-140 psi)
Connection:	1-phase, 230 V, 50/60 Hz, (10 A/16 A)** 1-phase, 120 V, 60 Hz, (15 A)** 3-phase, 400 V, 50/60 Hz, (10 A) **
Max. rated power:	1700 W (230 V)** 1300 W (120 V)** 2200 W (400 V)**

* According to EN 50242 standard.
** See type plate.

Component description

Components and measurement values

The specified resistance values apply at room temperature (about 20°C/68°F)
Values within ±10% are considered normal.

Article no.	Position	Component		Measurement value
8073779		EMC-filter with inductor		680 kohm
8083041		Filter with screwplint		1 Mohm
8079504		Heating element 1600 W 230 V		32 ohm
8079505		Heating element 1200 W 120 V		12 ohm
8078096		Thermistor		60 kohm
8083094		Combi disp. 230 V		1,32 kohm
8083095		Combi disp. 120 V		285 ohm
8078080		Circ.pump 220-240 V 50 Hz, 47 L (12.4 gallon)/min	Primary winding	115 ohm
8078080		Circ.pump 220-240 V 50 Hz	Auxiliary winding	260 ohm
8078082		Circ.pump 120 V 60 Hz, 47 L (12.4 gallon)/min	Primary winding	31,4 ohm
8078082		Circ.pump 120 V 60 Hz	Auxiliary winding	76 ohm
8078087		Drain pump 200-240 V 50 Hz, 16 L (4.2 gallon)/min		148 ohm
8078089		Drain pump 120V 60 Hz, 16 L (4.2 gallon)/min		26 ohm
8078084	2-3	Spray arm diverter 230 V 50/60 Hz		8,5 kohm
8078085	2-3	Spray arm diverter 120 V 60 Hz		2,6 kohm
8079502		Inlet valve single 200-240 V, 4 L (1 gallon)/min		3,9 kohm
8079503		Inlet valve single 120 V, 4 L (1 gallon)/min		0,95 kohm
8079500		Inlet valve security 220-240 V, 4 L (1 gallon)/min		2 kohm
8079501		Inlet valve security 120 V, 4 L (1 gallon)/min		0,5 kohm
8078090*		Water softener salt valve 220-240 V		3 kohm
8078090*		Water softener mix valve 220-240 V		2,33 kohm
8078302*		Water softener salt valve 120 V		0,65 kohm
8078302*		Water softener mix valve 120 V		0,65 kohm
8073830		Halogen lamp 5 W/12 V		<10 kohm
8084147		Thermo Actuator 110-240 V		0,85-1,2 kohm
8089578		Fan motor 230 V		0,85 kohm
8089580		Fan motor 120 V		185 ohm

* The number is for a complete water softener; replacement salt and mixer valves are not available separately.

Component description

Components and function description
Here we describe the function and specification of the most important components. Certain components are found only in more highly specified machines or in particular markets. See the *Troubleshooting* section for fault and information codes.

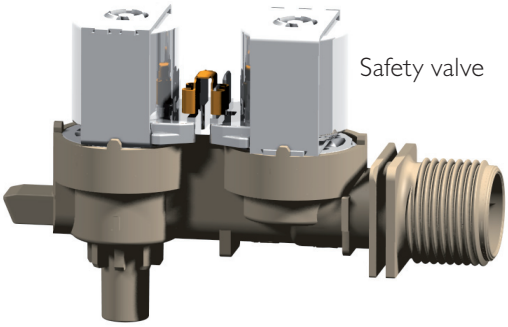
CU, Control Unit
The CU, or Control Unit, is a unit that functions as both a control panel and a logic component. The control panel is fitted with a display and touch buttons for selecting programs, options and Start/Stop. The control panel is an integrated part of the CU and cannot be replaced separately. The logic component manages functions needed for dishwashing programs and diagnosis. The CU has an internal power supply for the logic. In the event of a fault, the CU can diagnose a number of components and functions and display fault codes. To facilitate troubleshooting the service menu includes a component diagnostics function, which activates the outputs in a particular sequence.

Accelerometer
The control unit in DW90.2 contains an accelerometer, a sensor that senses position and acceleration. It controls the touch buttons and the brightness of the light. The accelerometer turns off at a specific angle to avoid causing a distraction when seen from the worktop. It is calibrated when the door is closed.

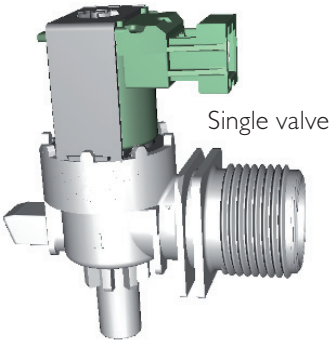
If this symbol appears on the display the door is not open enough. Open the door until the display lights up.

Inlet valve
The inlet valve has an electrical connector that is coded to ensure it is not mixed up. It is fitted with a filter, which can be removed for cleaning. Both single and safety valves are used as inlet valves. The inlet valve contains a filter to stop particles then a flow limiter to limit the flow to a maximum of 4 L (1 gallon)/min. It opens when the water pressure exceeds 0.3 bar (4.3 psi) and provides full flow at about 2 bar (29 psi). It has a pressure range of 0.3 bar (4.3 psi) to 10 bar (145 psi). The inlet valve is fitted to the air gap and can be replaced from the rear of the machine.

Purpose: To ensure that the machine is supplied with water for the different dishwashing cycles.

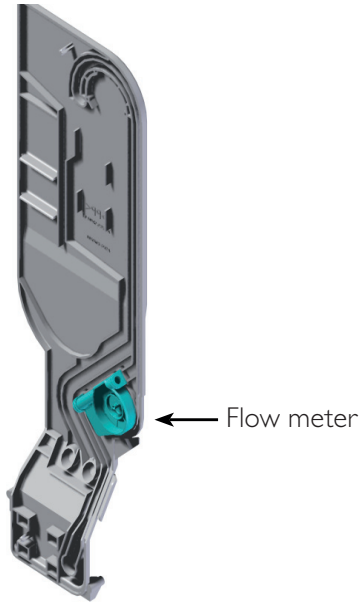


The safety valve has two independent valve seats, each controlled by a separate electromagnet. The valve seats are connected in series. This doubles the safety factor. The electromagnets are also connected in series (electrically), which means each magnet's rated voltage is half the mains voltage (e.g., a 230 V valve = 2 x 115 V coils)



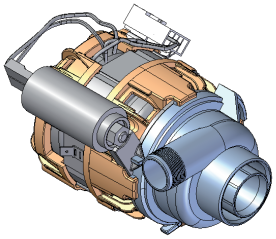
The single valve comprises an electromagnet and a valve seat.

Component description



Flow meter

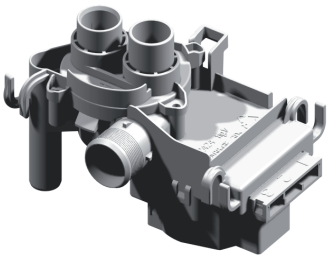
The flow meter is fitted in the air gap and cannot be replaced separately. It comprises an impeller that is rotated by the flow of water from the inlet valve. The impeller is fitted with two magnets that affect a sensor, a so-called reed switch. This is connected to the control unit via a wire and provides the control unit with information on the amount of water entering the machine. In order for the flow sensor to function normally the incoming water pressure must be at least 2 bar (29 psi). Output signal: 220 pulses per liter (0.26 gallon) of water flowing through.



Circulation pump

The circulation pump comprises an asynchronous motor with a capacitor and a pump housing with an impeller. The impeller and seals cannot be replaced separately, rather the entire pump must be replaced. The circulation pump can be rated 220-240V, 50/60Hz, as well as 120V, 60Hz.

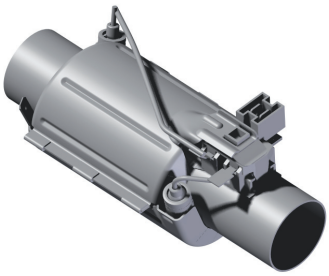
Purpose: To provide the spray system with the water pressure necessary for the dishwashing process.



Spray arm diverter

The spray arm diverter is under the spray arm hub on the underside of the cleaning compartment. The water from the circulation pump flows through the spray arm diverter, which alternates the flow of water between the upper and lower spray arms. The spray arm diverter comprises a synchronous motor that drives a disc valve. The disc has a smaller opening and a larger opening and as it rotates it distributes the water to the spray arms at low or high pressure. Information on the disc position is sent to the control unit. The spray arm diverter is calibrated when the main power switch is turned on.

Purpose: To distribute spray water to the spray arms in accordance with the program specification.

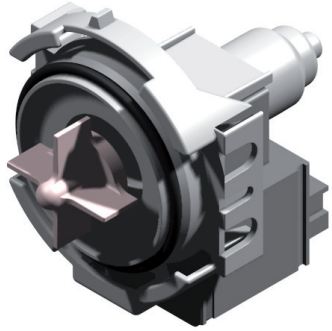


Heating element

The heating element is of the flow-through type and is fitted between the bottom drain and the suction connector of the circulation pump. It comprises a pipe with a heating coil. One side of the heating coil is fitted with an overheating cut-out with a trigger temperature of 98°C (208°F) and an automatic reset. The other side is fitted with a safety fuse that blows at 229°C (444°F). The element is replaced from the rear of the machine by first moving the circulation pump out of the way.

Purpose: To heat the dishwater to the correct temperature during the prewash/main wash and final rinse.

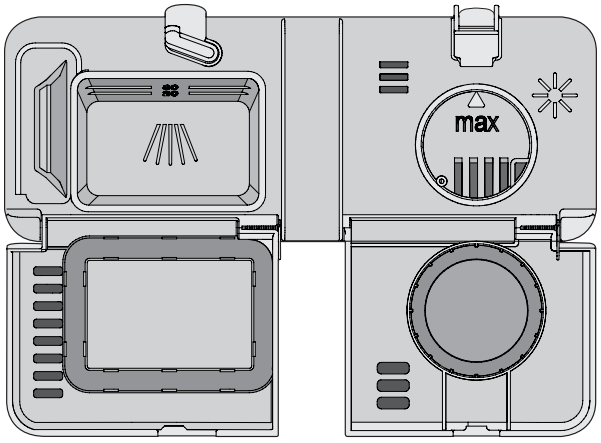
Component description



Drain pump

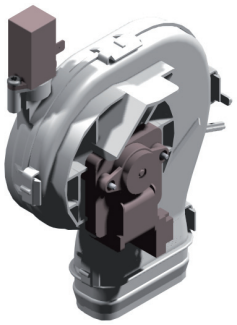
The drain pump is fitted to the bottom drain and can be replaced from the front of the machine. In the bottom drain, under the filters, is a cleaning plug which when removed enables the customer to clean the pump housing. In the event of a blockage the pump changes its direction of rotation to try to clear the blockage.

Purpose: To drain the water from the cleaning compartment in accordance with the program specification and in case of overflow.



Detergent and rinse aid dispenser

The dispenser has one container for detergent and one container for rinse aid. The containers are opened by activating the electromagnet found on the lock of each container. When first activated detergent is dispensed and when activated a second time rinse aid is dispensed. A weight (which is activated when the door is opened for loading and unloading) resets the mechanism so that the dispenser always dispenses detergent first when a new program is started.



Fan

The fan is fitted to the top edge of the inner door and comprises a fan motor, a fan housing, a venting duct, a double-sided impeller, a damper and a Wax motor that controls the damper function. The fan works throughout most of the dishwashing program in order to reduce the formation of condensation between the machine's inner and outer doors and to eliminate condensation between the outer door and the cover door on fully integrated machines.

During the drying program the fan sucks in cold, dry air from outside via the duct in order to cool it. The Wax motor opens the damper slowly allowing the fan to suck in the hot, damp air from the cleaning compartment. The two air flows are mixed in the duct where the moisture condenses into water that is routed into the cleaning compartment. The air is vented through a nozzle under the outer door.

Purpose: To vent the hot, damp air from the cleaning compartment so that the dishes dry during the drying program and to prevent condensation forming between the machine's inner and outer doors.

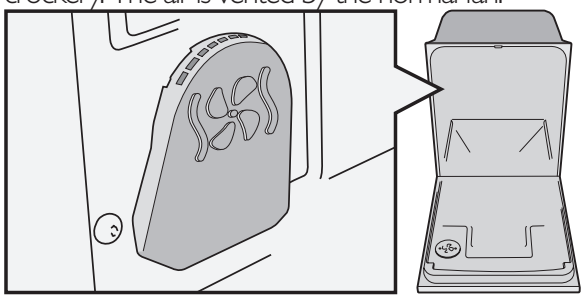
Cables

The machine is fitted with coded connectors to prevent incorrect wiring. The cables comply with the Rast 2.5 and Rast 5 standards.

Component description

Turbo Drying Express (TDE)

Certain machines are equipped with Turbo Drying Express, which provides more efficient drying, among other things. Hot air is blown into the cleaning compartment and used for drying and warming crockery. The air is vented by the normal fan.

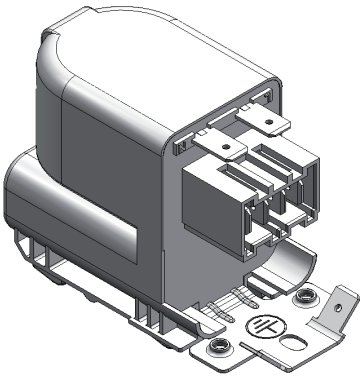


The nozzle that blows the hot air is fitted to the side wall of the cleaning compartment.

Main power switch

The main power switch has 2 pins and breaks the phase and the earth. However, power to the filters, overflow guard, drain pump and inlet valve is not cut when the main power switch is turned off.

On the DW90.2 the main power switch is electronic and is integrated with the control unit. The machine switches to standby when the main power switch is deactivated and when the door is closed. Standby is deactivated when the main power switch is activated and when the door is opened.



EMC filter with inductor

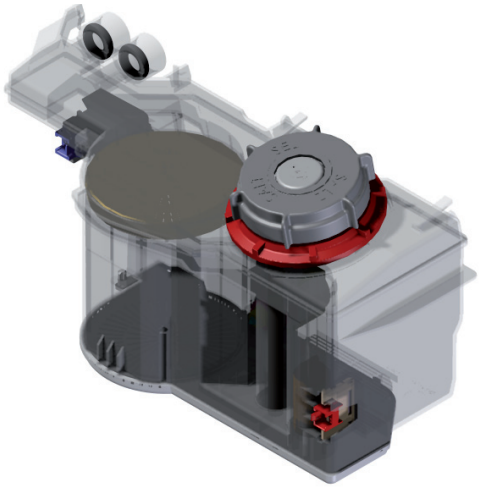
The filter is fitted at the front of the bottom plate and consists of a number of coils, condensers and resistors.

Purpose: To eliminate electromagnetic interference to and from the machine.

Door switch

A micro switch detects when the door has been opened. The program is paused and power to certain components (circulation pump, valves and more) is cut. The program continues where it left off when the door is closed. If a program is running the machine indicates that the door is open.

Purpose: To prevent the machine from running while the door is open.



Water softener

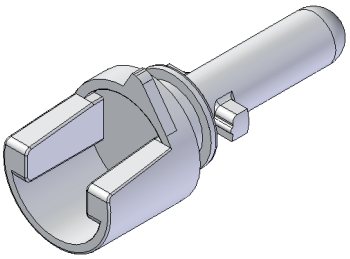
Certain machines are fitted with a water softener. The water softener is under the cleaning compartment and has a cap for topping up the salt in the bottom of the cleaning compartment. The water softener has two chambers, one for salt and one for ion exchange resin. It also has two electromagnetic valves (a mixer valve and a salt valve) which control the water flow to the salt chamber and through the ion exchange resin. When filling with water, the water flows through the chamber containing the ion exchange resin where the hard water is softened. The mixer valve is used to control whether the incoming water flows through or bypasses the chamber containing ion exchange resin depending on the water hardness setting. The salt valve is used to fill the chamber containing the ion exchange resin with water saturated with salt from the salt chamber when the ion exchange resin needs to be recharged. When the salt valve opens the water pocket in the air gap is emptied, with the water passing through the salt chamber and into the chamber containing the ion exchange resin.

Component description

Air gap

The air gap is found next to the cleaning compartment. It comprises channels through which the incoming water flows into the cleaning compartment. These channels also contain an anti-backflow device and the flow sensor through which the water passes. Certain models are equipped with a water pocket that collects water used for the water softener (only machines with a water softener). The air gap also works as a channel of air taken in during the drying phase, as well as a pressure relief for excess air when opening and closing the door. On machines with Turbo Drying Express (TDE) a lid is mounted on the inside of the air gap. If there is condensation in the kitchen interiors, make sure the lid is correctly fitted.

Purpose: To prevent dirty water from the cleaning compartment being sucked back into the water supply, and lead air to and from the container.



Thermistor

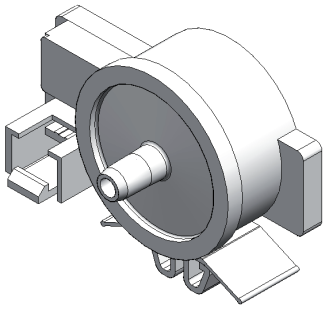
The thermistor for temperature measurement is located at the front edge of the bottom drain. The thermistor measures and controls the water temperature, which can be up to 70°C (158°F). If the thermistor short-circuits or loses contact with the CU, or of the thermistor does not register a temperature increase of 5°C (41°F) within 10 minutes of the element being activated, the element is switched off and a fault code is indicated. This is only indicated in the service menu. The thermistor is of the NTC type (Negative Temperature Coefficient), i.e. its resistance decreases as temperature increases.

Purpose: To control the water temperature during the dishwashing process.

Light

The light is a 5 W/12 V halogen bulb powered by the control unit via a micro switch. The lamp is activated when the door is opened more than 5° and automatically deactivated when the door has been open for more than 30 minutes. The control unit features protective components that limit the current to the light in case of a short circuit or if a bulb with too high a power rating is fitted. The bulb can be replaced from inside the cleaning compartment.

Component description



Pressure sensor

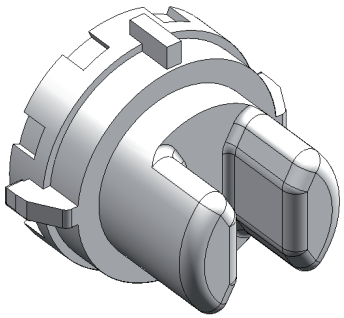
The pressure sensor is connected to the pressure chamber in the bottom drain. It measures the pressure, which corresponds to the water level in the machine. If the water level in the machine is too high (for five consecutive seconds) the drain pump starts and all other components are switched off. When the correct level is reached, the program continues where it left off. If the level sensor generates an output signal of <1 VDC during the prewash (indicating a blocked filter), an additional prewash is activated with an SCS step.
The level sensor also controls the draining time (can be extended from 20 seconds to a maximum of 2 min). The sensor also checks the need to refill (such as if a bowl fills with water).

Purpose: To prevent overflow, to detect a 'blocked filter', to when necessary refill the machine (such as if a bowl has filled with water) and to control the draining time.

Overflow guard

The overflow guard is integrated with the bottom drain. This overflow guard consists of a micro switch activated by a float if water collects on the machine's bottom plate. The micro switch is normally closed. When it is activated, it breaks the circuit to the CU, the drain pump starts, the program is interrupted and the machine indicates an overflow.

Purpose: To provide protection from any water leaks or flooding from the machine.

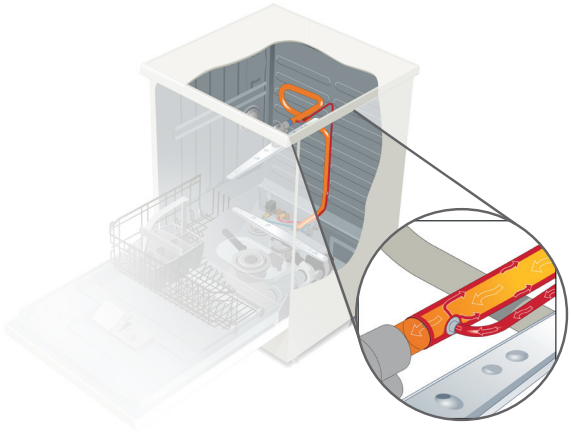


Turbidity sensor

Machines with an auto program have a turbidity sensor that measures how cloudy the water is. The sensor comprises an LED and a phototransistor. Between these two is the dishwater. The less light that reaches the phototransistor, the cloudier the water. The sensor is calibrated during the last rinse of the auto program. At different points during the auto program the output signal from the turbidity sensor provides data used to determine how the program will continue (number of prewashes, temperature, program time, number of rinses and so on). If the turbidity sensor fails, the machine assumes the water is ''very cloudy'', which results in a longer program time, with prewashes, additional rinses and so on.
The turbidity sensor is located at the front edge of the bottom drain and is replaced from the front of the machine.

Purpose: To sense how dirty the dishes are and to provide the control unit with information about which program is best suited to the dishes.

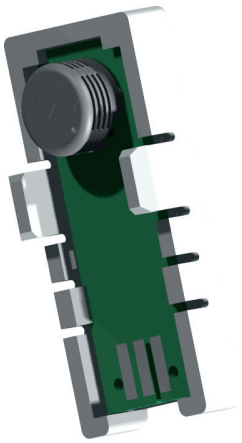
Component description



Heating Water Circuit (HWC)

A certain type of machine is adapted for connection to the building's existing hot water supply to reduce energy consumption.

The function settings for these machines are changed via the service menu.



Humidity sensor

The humidity sensor is located in the fan housing. The sensor is of the capacitive type and measures relative humidity. The humidity sensor measures the ambient humidity before the drying program begins and controls the drying time until it senses a humidity level close to that before the drying program began.

Purpose: To make sure the drying program runs as long as necessary to ensure a satisfactory drying result.

Status Light™

To the right at the bottom edge of the door is a light that communicates in three different colours to indicate the machine's status.

BLUE - The program has started, but you can still load more dishes into the machine (no detergent in the machine).

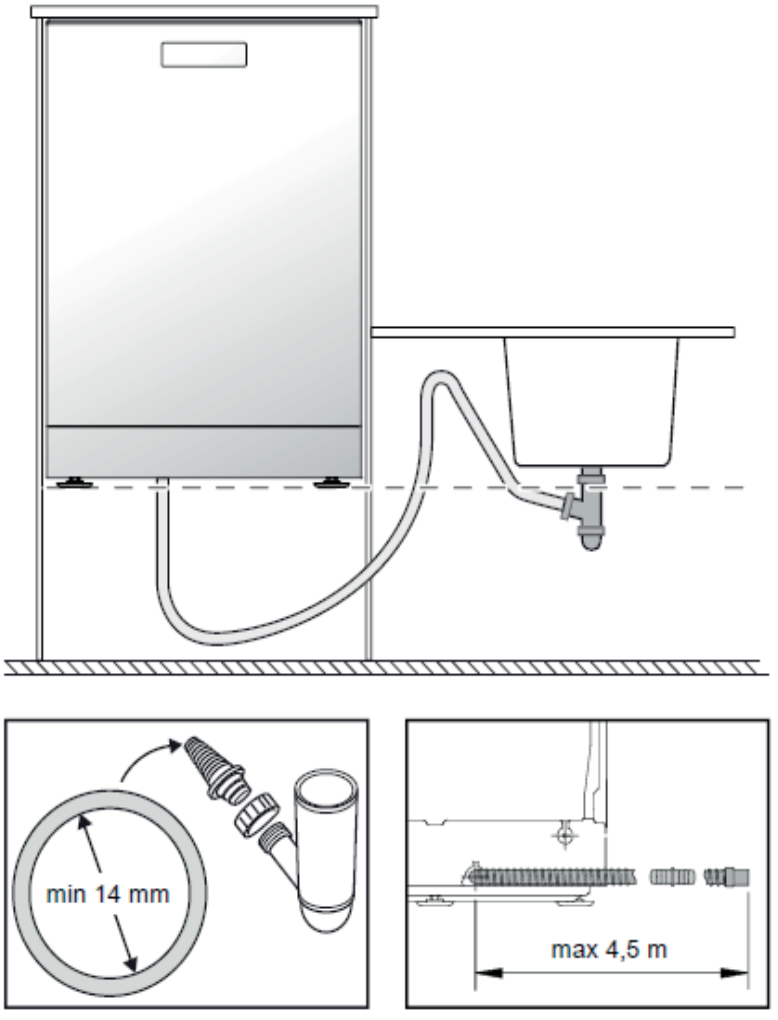
RED - Constant red light; loading more dishes into the machine not recommended (detergent in the machine). Flashing red light indicates a fault. This can mean a water inlet fault, leaking valve, overflow or water outlet fault. In case of fault, see the troubleshooting section.

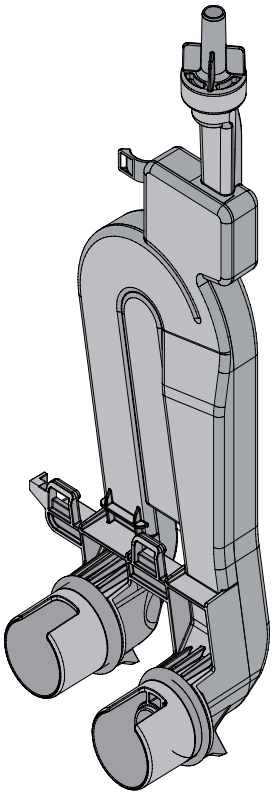
GREEN - The program has finished, unload the machine.

Component description

Anti siphon

Dishwashers equipped with Anti-Siphon device can be installed in an elevated installation.
The drainage hose can run to a lower level than the bottom of the dishwasher without emptying the dishwasher of water during the wash cycle.
The Anti-Siphon device acts as a pressure equalizer which ensures that over- or under-pressure never occurs in the machine. This prevents the machine from either being emptied of water or sucking water from the drain. As an extra security measure the drain hose is fitted with a check valve.



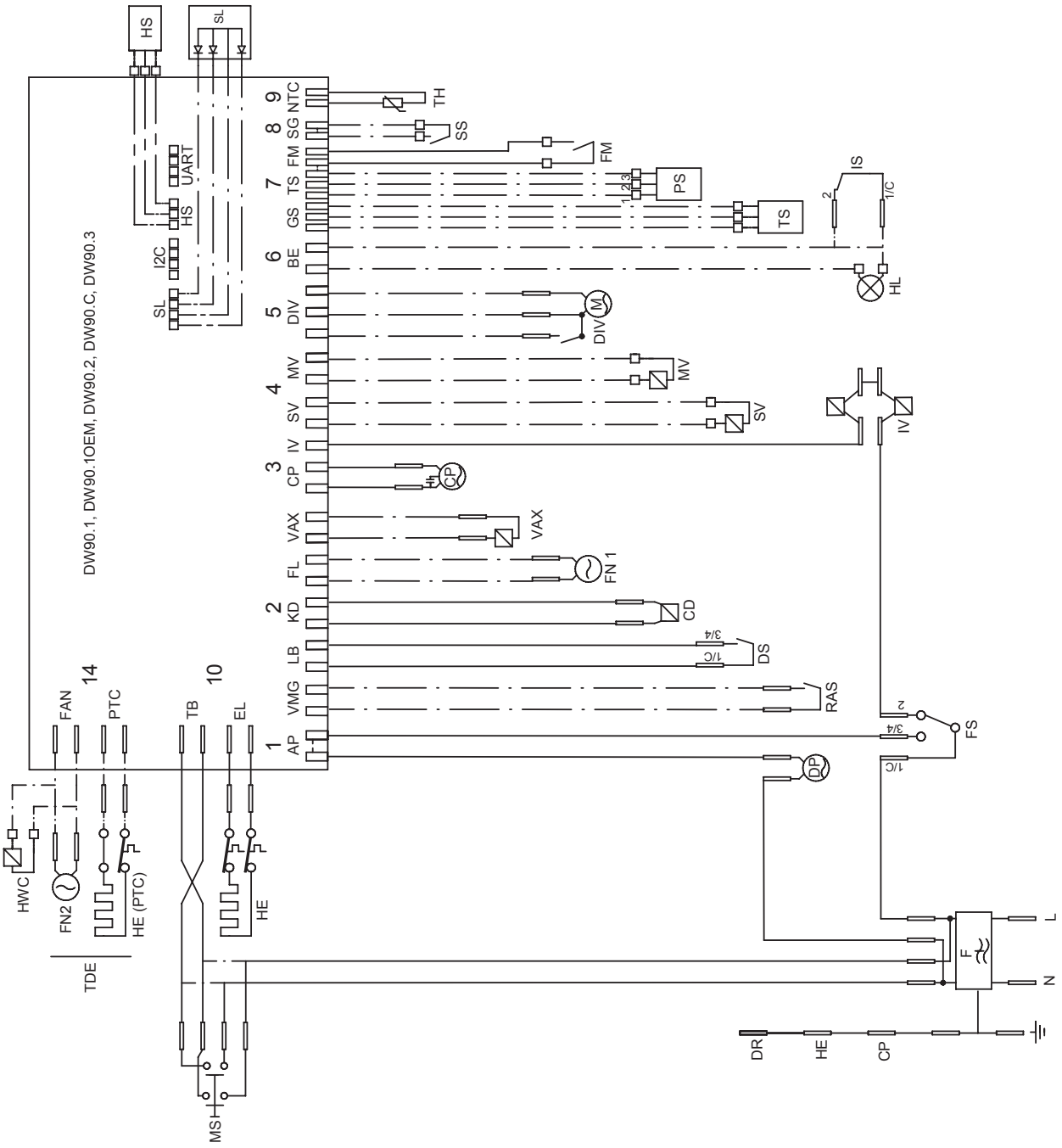


The anti-siphon device is placed on the left side of the dishwasher.

The drainage hose may be extended by a maximum of 3m (the total length of the drainage hose must not exceed 4,5m). Any joins and connecting pipes must have an internal diameter of at least 14mm.

Programs and control unit

Wiring diagram



CIRCUIT DIAGRAM DW90.1, DW90.1OEM, DW90.2, DW90.C, DW90.3

80 840 68-01

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Asko Appliances AB

FORMAT A4

KD/CD: COMBI DISPENSER
CP: CIRCULATION PUMP
DIV: WATER DIVERTER VALVE
AP/DP: DRAIN PUMP
DR: DOOR
LB/DS: DOOR SWITCH
F: FILTER
FM: FLOW METER
FL/FN 1: FAN DOOR
FAN/FN 2: FAN BOTTOM
FS: FLOAT SWITCH
EL/HE: HEATING ELEMENT
HE (PTC): HEATING ELEMENT PTC
BE/HL: HALOGEN LAMP
HS: HUMIDITY SENSOR
IS: ILLUM. SWITCH
IV: INLET VALVE
I2C: I2C
TB/MS: MAIN SWITCH
MV: MIX VALVE
TS/PS: PRESSURE SENSOR
VMG/RAS: RINSE AID SENSOR
SL: STATUS LIGHT
SG/SS: SALT SENSOR
SV: SALT VALVE
NTC/TH: THERMISTOR
GS/TS: TURBIDITY SENSOR
UART: UART
VAX: VAX ACTUATOR
HWC: HOT WATER CIRCUIT

———— WIRES IN ALL MACHINES
— —— — INTERNAL CONNECTION
—— · —— WIRES IN SOME MACHINES

RESISTANCES AT ROOM TEMPERATURE (CA. 20°C/68°F)
VALUES WITH +/-10% ARE REGARDED AS NORMAL

COMPONENT	RESISTANCE
RADIO INTERFERENCE SUPPRESSION FILTER	1 MOHM
HEATING ELEMENT 1200W 120V	12 OHM
HEATING ELEMENT 1600W 230V	32 OHM
HEATING ELEMENT 2040W 230V	25 OHM
THERMISTOR	60 KOHM
COMBINED DISPENSER 120V	0,28 KOHM
COMBINED DISPENSER 230V	1,32 KOHM
CIRCULATION PUMP 120V 60HZ	32 OHM
CIRCULATION PUMP 230V 50HZ	110 OHM
CIRCULATION PUMP 220V 60HZ	56 OHM
DRAIN PUMP 120V 60HZ	25 OHM
DRAIN PUMP 230V 50HZ	150 OHM
DRAIN PUMP 230V 60HZ	85 OHM
SPRAY ARM DIVIDER 120V 60HZ	2.6 KOHM
SPRAY ARM DIVIDER 230V 50/60HZ	8,5 KOHM
INLET VALVE SINGLE INCL. 120V	0.95 KOHM
INLET VALVE SAFETY INCL. 120V	0.5 KOHM
INLET VALVE SINGLE INCL. 230V	3,9 KOHM
INLET VALVE SAFETY INCL. 230V	2 KOHM
SALT VALVE 120V	0,65 KOHM
MIX VALVE 120V	0,65 KOHM
SALT VALVE 230V	3 KOHM
MIX VALVE 230V	2,3 KOHM
HALOGEN LAMP 5W 12V	<10 KOHM
WAX MOTOR	1.1 KOHM
FAN MOTOR 120V	0.18 KOHM
FAN MOTOR 230V	0,85 KOHM
FAN MOTOR 2 120V	0,22 KOHM
FAN MOTOR 2 230V	0,90 KOHM

Programs and control unit

Program flow description

If the component test in the service menu is not sufficient to identify a fault you can run a program and compare the results with the flow description below. If they are in agreement this indicates a correctly functioning control unit.

Presented below is the Daily wash program, no options selected (DW90.1).

Step	Component	Time	Comment
Prewash			
1	Drain process	6 sec	12-16 sec when restarting or if an earlier program was interrupted
2	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
3	Circ. pump	3 sec	
4	Pause	30 sec	If water temperature is >30°C ECO program starts (DW90.1)
5	Circ. pump	30 sec	
6	Pause	5 sec	
If ECO is set	Circ.pump	120 sec	
	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
7	Circ.pump	360 sec	
8	Pause	5 sec	
9	Circ.pump	150 sec	If the level sensor indicates under IV the drain process will be interrupted earlier.
10	Cleaning cycle for container	90 sec	Maximum time 90 sec. Minimum time 76 sec*
11	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
Main wash			
12	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
13	Circ. pump + Combi dispenser	10 sec	
14	Circ. pump + Element		60°C
15	Circ. pump	1560 sec	
16	Cleaning cycle for container	90 sec	Maximum time 90 sec. Minimum time 76 sec*
17	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
1:st rinse			
18	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
19	Cleaning cycle for container	90 sec	
20	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
2:nd rinse			
21	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
22	Circ. pump	240 sec	
23	Cleaning cycle for container	90 sec	Maximum time 90 sec. Minimum time 76 sec*
24	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
3:rd rinse			
25	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
26	Circ. pump + Element		65°C
27	Circ. pump + Combi dispenser	10 sec	Pulses (varies depending on the setting of rinse aid)
28	Circ. pump	300 sec	
29	Pause	60 sec	
30	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
Drying			
31	Fan	480 sec	
32	Signal	4 sec	If signal is selected

Programs and control unit

Program flow description

Presented below is the Quick program, no options selected (DW90.1).

Step	Component	Time	Comment
Main wash			
1	Drain process	6 sec	12-16 sec when restarting or if an earlier program was interrupted
2	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
3	Circ. pump	3 sec	
4	Pause	30 sec	If water temperature is >30°C ECO program starts (DW90.1)
5	Circ. pump	30 sec	
6	Pause	5 sec	
If ECO is set	Circ.pump	120 sec	
	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
7	Circ. pump + Combi dispenser	10 sec	
8	Circ. pump + Element		60°C If ECO 30°C
9	Circ. pump	30 sec	
10	Cleaning cycle for container	90 sec	Maximum time 90 sec. Minimum time 76 sec*
11	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
1:st rinse			
12	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
13	Circ. pump	3 sec	
14	Pause	5 sec	
15	Circ. pump	3 sec	
16	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
2:nd rinse			
17	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
18	Circ. pump	150 sec	
19	Cleaning cycle for container	90 sec	Maximum time 90 sec. Minimum time 76 sec*
20	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
3:rd rinse			
21	Inlet process	255 sec	Maximum time. Inlet time is controlled by a flow meter**
22	Circ. pump	60 sec	
23	Circ. pump + Element		60°C
24	Circ. pump + Combi dispenser	10 sec	Pulses (varies depending on the setting of rinse aid)
25	Drain process	120 sec	Maximum time. Time is controlled by level sensor***
Drying			
26	Fan	480 sec	
27	Signal	4 sec	If signal is selected

Explanations			
Cleaning process *	Cleaning cycle for container	90 sec	The circ. pump stops and the drain pump runs for 2 sec. The circ. pump runs for 3 sec. and then rests for 5 sec. In total this is repeated eight times, but the fifth time the circ. pump is resting for 8 sec instead of 5 sec, when spray arm diverter is switching to the upper spray arm.
Inlet process **	Inlet process	255 sec	A flow meter signals the flow in pulses. The control unit (CU) determines how many pulses to be calculated for each inlet. If not 80 pulses has been reached within 60 sec or a specific number of pulses is not reached within 255 sec, the program will be interrupted.
Drain process ***	Drain process	120 sec	The drain pump starts and pumps out until the level sensor reaches a specified value. After that, the drain pump continues for additional 10 sec. The total time depends on how long it takes to reach the specified value from the level sensor. If the specified value is not reached within 120 sec, the program will be interrupted.

Troubleshooting

Dishwashing results

Check the following points if the dishes are not clean (always begin by checking any fault codes and the most recent fault indication in the service menu):

- That the customer is using the right dishwashing program.
- If heavily soiled dishes are being loaded, such as pots or oven dishes, choose a heavier program.
- Check that the customer is using a suitable dishwashing detergent, preferably one with proven good results.
- Detergent is a perishable product. Check that the detergent is not too old and that the customer is using the right amount. **Most importantly not too much detergent**.
- For machines with a water softener, dose as for soft water.
- Check that the customer is loading the machine correctly.
- Check that no dishes are preventing the spray arms from rotating and that the holes are not clogged.
- Check that the machine has the right water level. See the *Water level* section for more information.
- Check that the access plug on the left side of the bottom drain by the drain pump is in place.
- Check that the machine heats to the right temperature.

Film or marks on dishes after washing

- Is the water softener cover properly tightened?
- Is the rinse aid dispenser correctly adjusted?
- Is the water softener correctly adjusted?
- Is there any salt in the salt compartment?
- Is the right type of salt being used?

Common faults

If the dishwasher does not work, you should first check whether this is due to a simple fault, something that the customer can rectify. Use the following questions to troubleshoot the machine.

The machine will not start

- Has the house breaker/fuse been tripped or blown?
- Has the machine been turned on?
- Is the door properly closed?
- Is the water supply turned on?

If the answer to any of the above questions is "YES" and the machine seems to lack power, first check that there is power at the main power switch and the control unit. Replace any faulty component.

Water remaining in the machine

- Is the drain hose blocked? Check the connection to the household drain.
- Is the drain hose kinked?
- Are the filters blocked?
- Is the drain pump blocked?
- Is the access plug on the left side of the bottom drain by the drain pump incorrectly fitted?

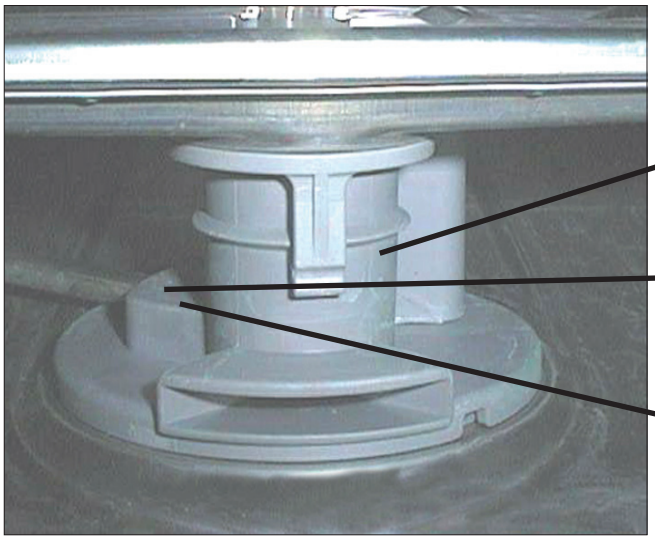
If the fault cannot be found with the help of this chapter, open the service menu and perform a function test on all components

For more information, see the machine's **operating instructions**.

Troubleshooting

Water level DW90
When servicing a DW90 dishwasher it is important to check the water level in the machine. This is particularly important when programming the time-controlled water intake. Too low or too high water level can cause poor dishwashing results.

Always allow the machine to take in and drain the water a few times before checking the level.


Overflow level = 4.7 L (1.24 gallons)
Without spray arm diverter = 3.2 L (0.8 gallons)
(1.5 mm (1/16") above the level)
With spray arm diverter = 2.95 L (0.7 gallons)
(in line with the level)

Check the level against the lower spray arm hub
In the event of too low water level, the filter in the inlet valve must always be checked and rinsed clean of any sediment.

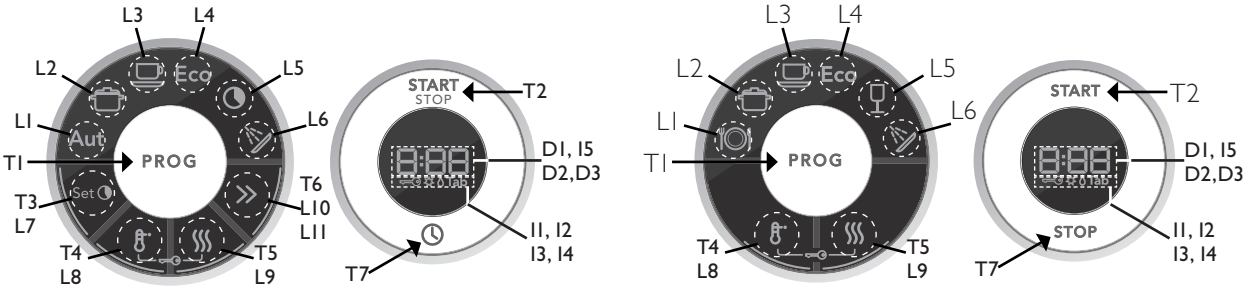
The inlet hose with a 3/4" connection at both ends has a filter in the connector outside the machine that must also be checked and rinsed clean of any sediment.

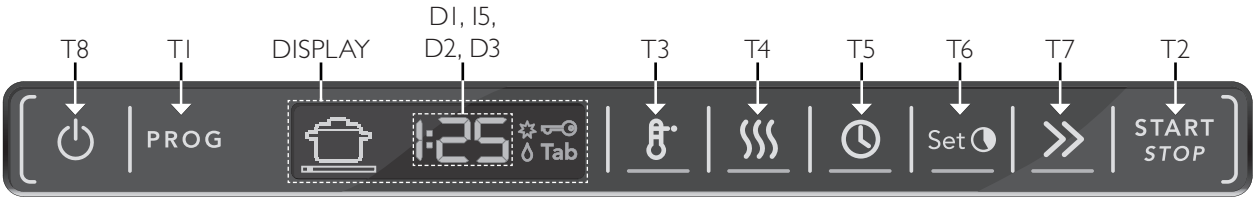
In the US the inlet hose has a 3/8" connection at both ends and no filter in the connector outside the machine.

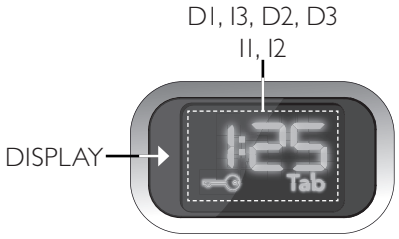
Troubleshooting

Fault indication

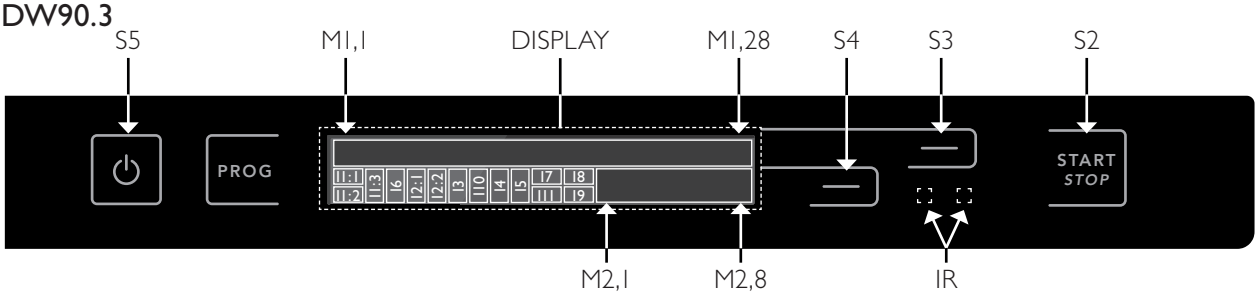
DW90.1 - BRAND ASKO



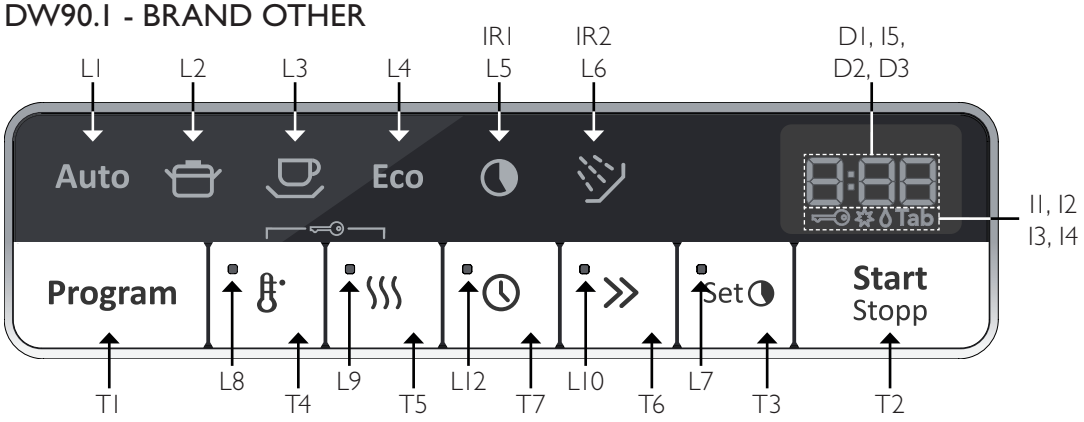




DW90.3



DW90.1 - BRAND OTHER



L = LED, S / T = Push button, F = Fault code or plain text on display, D = Display, I = Indication

Troubleshooting

Fault and information codes DW90.1

Audible signal sounds when a fault is indicated on the display.

Display	Cause	Action
☰☰	The door is open	Close the door
F:41	**Temp stop fault** Temperature increase less than 5°C (41°F) in ten minutes. Program continues with the process. Only indicated in service menu.	**Check** Element, thermistor, water level, circulation pump, control unit and cables.
F:10	**Overfilling** Too much water in the machine (pressure sensor) or float activated. If the water has not been emptied within 60 seconds, the program stops (drain pump activated).	**Check** Drain pump (blocked hose), flow meter, inlet valve, leaks and cables.
F:42	**Thermistor fault** Communication between the thermistor and control unit has stopped or the thermistor is reporting temperatures greater than 80°C (176°F). Program continues with the process. Only indicated in service menu.	**Check** Thermistor, plugs, wire harness, and control unit.
F:12	**Water inlet fault** < 80 pulses within 60 seconds or correct number of pulses not achieved within 255 seconds. Program stops.	**Check** Water inlet, flow meter, inlet valve and cables.
F:40	**Inlet valve leakage** Water intake detected when inlet valve deactivated in program sequence or standby. In this case the machine attempts to close the valve by opening it for 2 seconds and then closing it again. If water flow through the valve is still detected any current program is stopped (drain pump activated).	**Check** Leak through inlet valve and flow meter.
F:43	**Pressure sensor fault** Output signal > 4.8 V. The program continues. Only indicated in service menu.	**Check** Pressure sensor, control unit and cables.
F:11	**Water outlet fault** Water not drained after 120 seconds draining. Program stops.	**Check** Drain pump, hoses, drain hose fittings, control unit and cables. Also check whether filter is blocked.
F:44	**Turbidity sensor fault** Only indicated in service menu. The machine assumes high turbidity in case of "uncertainty" in the auto program.	**Check** Water quality, filters, turbidity sensor and drain system.
F:45	**Spray arm diverter fault** Position switch always closed or open. The program continues. Only indicated in service menu.	**Check** Spray arm diverter (functioning gearbox, switches and cables).

Troubleshooting

Fault and information codes DW90.2

Audible signal sounds when a fault is indicated on the display.

Display	Cause	Action
☰☰☰	The door is open	Close the door
F:41	**Temp stop fault** Temperature increase less than 5°C (41°F) in ten minutes. Program continues with the process. Only indicated in service menu.	**Check** Element, thermistor, water level, circulation pump, control unit and cables.
F:10	**Overfilling** Too much water in the machine (pressure sensor) or float activated. If the water has not been emptied within 60 seconds, the program stops (drain pump activated).	**Check** Drain pump (blocked hose), flow meter, inlet valve, leaks and cables.
F:42	**Thermistor fault** Communication between the thermistor and control unit has stopped or the thermistor is reporting temperatures greater than 80°C (176°F). Program continues with the process. Only indicated in service menu.	**Check** Thermistor, plugs, wire harness, and control unit.
F:12	**Water inlet fault** < 80 pulses within 60 seconds or correct number of pulses not achieved within 255 seconds. Program stops.	**Check** Water inlet, flow meter, inlet valve and cables.
F:40	**Inlet valve leakage** Water intake detected when inlet valve deactivated in program sequence or standby. In this case the machine attempts to close the valve by opening it for 2 seconds and then closing it again. If water flow through the valve is still detected any current program is stopped (drain pump activated).	**Check** Leak through inlet valve and flow meter.
F:43	**Pressure sensor fault** Output signal > 4.8 V. The program continues. Only indicated in service menu.	**Check** Pressure sensor, control unit and cables.
F:11	**Water outlet fault** Water not drained after 120 seconds draining. Program stops.	**Check** Drain pump, hoses, drain hose fittings, control unit and cables. Also check whether filter is blocked.
F:44	**Turbidity sensor fault** Only indicated in service menu. The machine assumes high turbidity in case of "uncertainty" in the auto program.	**Check** Water quality, filters, turbidity sensor and drain system.
F:45	**Spray arm diverter fault** Position switch always closed or open. The program continues. Only indicated in service menu.	**Check** Spray arm diverter (functioning gearbox, switches and cables).

Troubleshooting

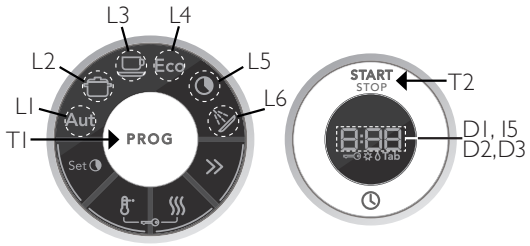
Fault and information codes DW90.3

Audible signal sounds when a fault is indicated on the display.

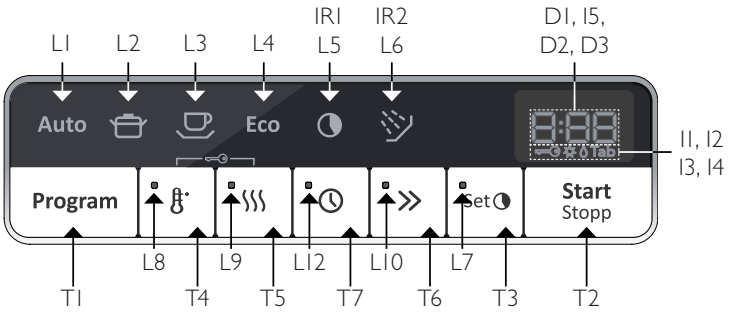
Display	Cause	Action
Close the door	The door is open	Close the door
Temp stop fault	**Temp stop fault** Temperature increase less than 5°C (41°F) in ten minutes. Program continues with the process. Only indicated in service menu.	**Check** Element, thermistor, water level, circulation pump, control unit and cables.
Overfilling	**Overfilling** Too much water in the machine (pressure sensor) or float activated. If the water has not been emptied within 60 seconds, the program stops (drain pump activated).	**Check** Drain pump (blocked hose), flow meter, inlet valve, leaks and cables.
Thermistor fault	**Thermistor fault** Communication between the thermistor and control unit has stopped or the thermistor is reporting temperatures greater than 80°C (176°F). Program continues with the process. Only indicated in service menu.	**Check** Thermistor, plugs, wire harness, and control unit.
Water inlet fault	**Water inlet fault** < 80 pulses within 60 seconds or correct number of pulses not achieved within 255 seconds. Program stops.	**Check** Water inlet, flow meter, inlet valve and cables.
Inlet valve leakage	**Inlet valve leakage** Water intake detected when inlet valve deactivated in program sequence or standby. In this case the machine attempts to close the valve by opening it for 2 seconds and then closing it again. If water flow through the valve is still detected any current program is stopped (drain pump activated).	**Check** Leak through inlet valve and flow meter.
Pressure sensor fault	**Pressure sensor fault** Output signal > 4.8 V. The program continues. Only indicated in service menu.	**Check** Pressure sensor, control unit and cables.
Water outlet fault	**Water outlet fault** Water not drained after 120 seconds draining. Program stops.	**Check** Drain pump, hoses, drain hose fittings, control unit and cables. Also check whether filter is blocked.
Turbidity sensor fault	**Turbidity sensor fault** Only indicated in service menu. The machine assumes high turbidity in case of "uncertainty" in the auto program.	**Check** Water quality, filters, turbidity sensor and drain system.
Diverter fault	**Spray arm diverter fault** Position switch always closed or open. The program continues. Only indicated in service menu.	**Check** Spray arm diverter (functioning gearbox, switches and cables).
Humidity sensor fault	**Humidity sensor fault** "Humidity sensor fault" (only in service menu)	**Check** Humidity sensor, cables, fan, damper and Wax motor.
Clean filter	**Clean filter** The display indicates "Clean filter" automatically after every 300 cycles.	This message is not a fault code but a reminder to the customer to check the filters and clean them if necessary. The message disappears the next time a button is pressed.

Service menu

DW90.1 - BRAND ASKO



DW90.1 - BRAND OTHER

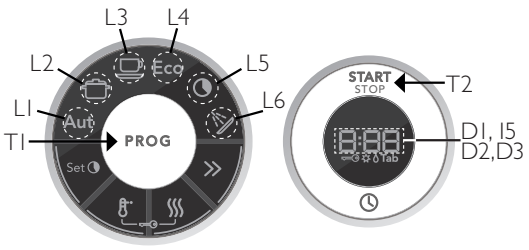


Opening the service menu	
⏻	Check that the machine is switched on. Otherwise switch on the main power switch (1/0). Wait until the LCD display lights up before next step.
PROG + START	Within 5 seconds, press (T1) and then press (T2), and keep them pressed for 5 seconds. (L1), (L3) and (L6) indicates that the service menu is activated. When the service menu is opened the most recent of the error messages (D1), (I5), (D2) and (D3) is shown. In order to keep the last error message in the display, release (T2) first, otherwise the next step in the service menu is activated. All error messages are erased by a total reset. The service menu is closed by turning off the power to the machine.
START	Press the button (T2) to navigate the menu system step by step.
PROG	Press the button (T1) to scroll between settings. Press (T2) to save the setting and continue to the next menu step.
START	Press (T2) at the last step of the menu to close the service menu and save the most recent settings.

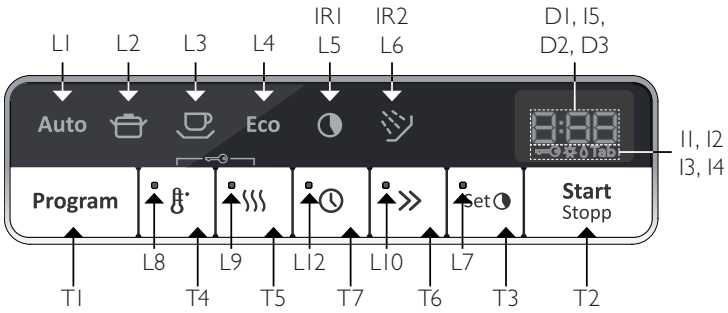
Menu step/Turn/Push	LCD	Comments/instructions
START		
Diagnostics	d:01	Mixer valve and inlet valve on (1 second delay between mixer valve, if available, and inlet valve)
	d:02	Inlet valve and mixer valve, if available, off for 1 second then inlet valve on
	d:03	Salt valve on (if available)
	d:04	Combi dispenser on
	d:05	Circulation pump on and the spray arm diverter (if available) shall alternate between positions 1 and 3 every 30 seconds
PROG	d:06	Circulation pump and heater on - max. 75°C (167°F)
	d:07	Fan and Wax motor
	d:08	Drain pump on
	d:00	No components on
START		
Water intake	P: 0	Normal water intake, default setting
	P: 5	Water intake increases by +5%
	P:10	Water intake increases by +10%
	P:15	Water intake increases by +15%
	L: 0	Time, flow meter switched off, intake time: pulse value x 0.068 [s]
PROG	L: 5	Time-controlled water intake increases by +5%
	L:10	Time-controlled water intake increases by +10%
	L:15	Time-controlled water intake increases by +15%
START		

Service menu

DW90.1 - BRAND ASKO



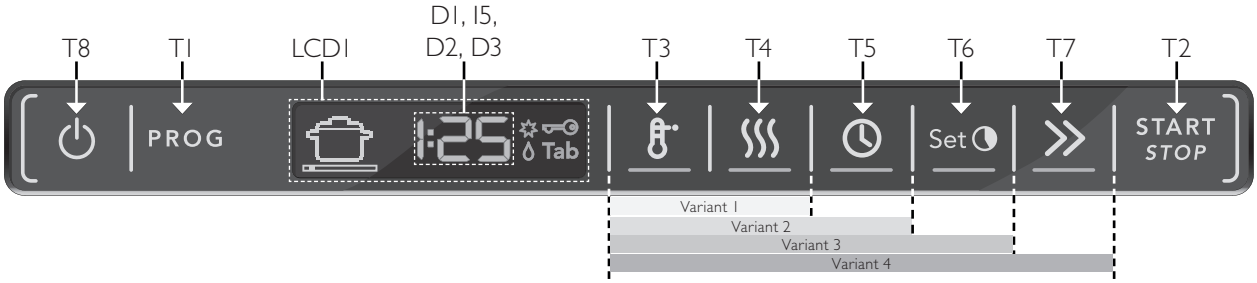
DW90.1 - BRAND OTHER



Menu step/Turn/Push	LCD	Comments/instructions	Brand
Variant **PROG**	U: 1	Variant 1, default setting (Temperature, Drying)	ASKO
	U: 2	Variant 1, default setting (Temperature, Drying)	OTHER
	U: 3	Variant 3 (Temperature, Drying, Delayed start)	ASKO
	U: 4	Variant 3 (Temperature, Drying, Delayed start)	OTHER
	U: 5	Variant 5 (Temperature, Drying, Delayed start, Time saver, Time program)	ASKO
	U: 6	Variant 5 (Temperature, Drying, Delayed start, Time saver, Time program)	OTHER
	U: 7	Variant 7 (Temperature, Drying, Delayed start, Time saver, Time program, Upper/Lower half load)	ASKO OTHER
START			
Region **PROG**	EU	Region Europe (as well as China and Japan), default setting	
	US	Region USA (as well as Taiwan)	
	AU	Region Australia	
START			
Fan sequence **PROG**	Y: 0	No fan sequence during program. Dries the load.	
	Y: 1	Fan works in sequence during the wash cycle, not in normal program, default setting	
	Y: 2	Fan works in sequence during the wash cycle, even during normal program	
START			
ECO **PROG**	E: 0	ECO off, default setting	
	E: 1	ECO on, if machine connected to hot water supply less electricity used to heat water and program time shortened.	
START			
Super rinse **PROG**	S: 0	Super rinse off, default setting	
	S: 1	Super rinse on. Adds two extra rinses.	
START			
Total reset **PROG**	r: 0	No total reset next time T2 is pressed, default setting	
	r: 1	Total reset next time T2 is pressed. Should be done after replacing the control unit to reset all the sensors.	
START			

Service menu

DW90.2

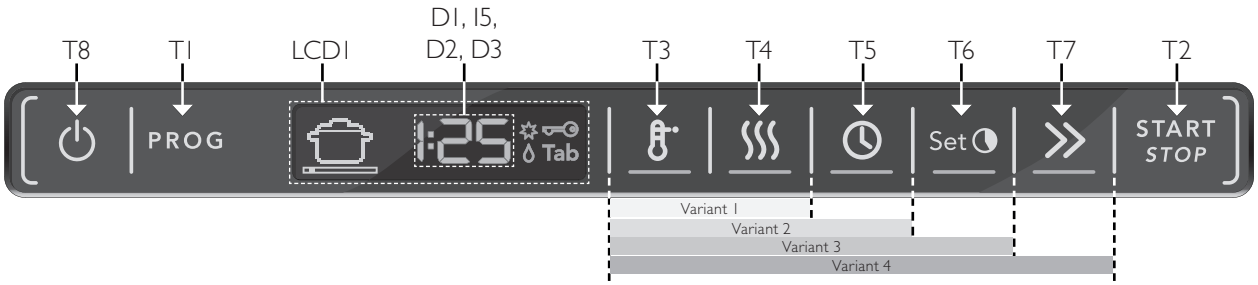


Opening the service menu	
PROG + START	Open the door, put the machine in standby mode by pressing the main power switch (T8). Activate the machine again by pressing the button (T8), press and hold the program selector (T1) and (T2) for 5 sec. LCD shows: SERV. When the service menu is opened the most recent error message is shown, F:XX. All error messages are erased by a total reset. It is only possible to leave the service menu by pressing the button (T2). It is not possible to leave the service menu by using the main power switch (T8).
START	Press the button (T2) to navigate the menu system step by step.
PROG	Press the button (T1) to scroll between settings. Press (T2) to save the setting and continue to the next menu step.
START	Press (T2) at the last step of the menu to close the service menu and save the most recent settings.

Menu step/Turn/Push	LCD	Comments/instructions
START		
Diagnostics	d:01	Mixer valve and inlet valve on (1 second delay between mixer valve and inlet valve)
	d:02	Inlet valve and mixer valve off for 1 second then inlet valve on
	d:03	Salt valve on
	d:04	Combi dispenser on
	d:05	Circulation pump on and the spray arm diverter (if available) shall alternate between positions 1 and 3 every 30 seconds
PROG	d:06	Circulation pump and heater on - max. 75°C (167°F)
	d:07	Fan and Wax motor and Turbo Drying Express and Heating Water Circuit on
	d:08	Drain pump on
	d:00	No components on
START		
Water intake	P:0	Normal water intake volume, default setting
	P:5	Water intake volume increases by +5%
	P:10	Water intake volume increases by +10%
	P:15	Water intake volume increases by +15%
	L:0	Time, flow meter switched off, intake time: pulse value x 0.068 [s]
PROG	L:5	Time-controlled water intake increases by +5%
	L:10	Time-controlled water intake increases by +10%
	L:15	Time-controlled water intake increases by +15%
START		

Service menu

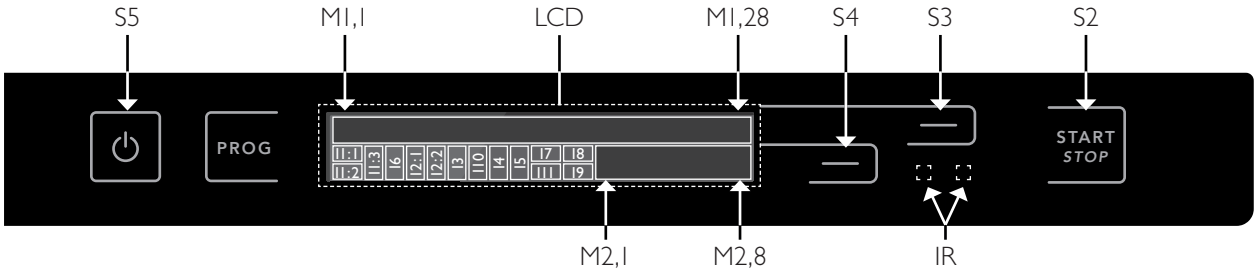
DW90.2 cont.



Menu step/Turn/Push	LCD	Comments/instructions
Variant **PROG**	U:1	Variant 1, default setting (Temperature, Drying)
	U:2	Variant 2 (Temperature, Drying, Delayed start)
	U:3	Variant 3 (Temperature, Drying, Delayed start, Time program)
	U:4	Variant 4 (Temperature, Drying, Delayed start, Time saver)
START		
Region **PROG**	EU	Region Europe (as well as China and Japan), default setting
	US	Region USA (as well as Taiwan)
	AU	Region Australia
START		
Fan sequence **PROG**	Y:0	No fan sequence during program. Dries the load.
	Y:1	Fan works in sequence during the wash cycle, not in normal program, default setting
	Y:2	Fan works in sequence during the wash cycle, even during normal program
START		
TDE & HWC **PROG**	A:0	Turbo Drying Express and Heating Water Circuit off, default setting
	A:1	Turbo Drying Express on.
	A:2	Heating Water Circuit on. Uses hot water system as far as possible, aided by electrical energy, to minimize energy consumption.
START		
Super rinse **PROG**	S:0	Super rinse off, default setting
	S:1	Super rinse on. Adds two extra rinses.
START		
Total reset **PROG**	r:0	No total reset next time T2 is pressed, default setting
	r:1	Total reset next time T2 is pressed. Should be done after replacing the control unit to reset all the sensors. *(Setting for TDE or HWC reverts to default off and has to be set again after a total reset.)*
START		

Service menu

DW90.3

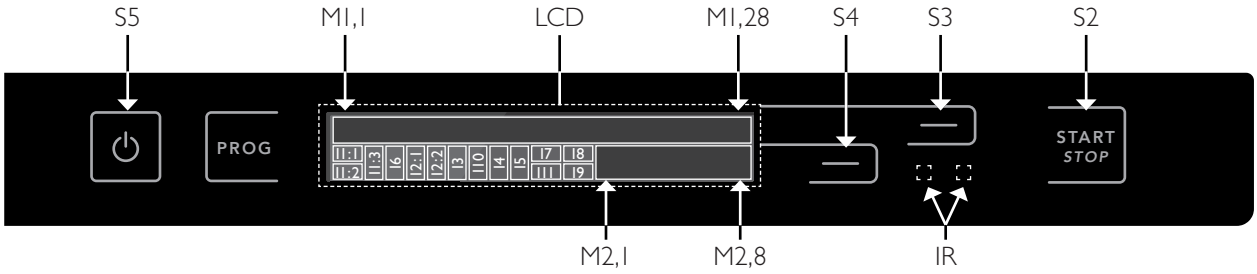


Opening the service menu	
⏻	Check that the machine is switched off. Otherwise switch off the main power by pressing the button (S5).
PROG + START	Press and hold the program selector (S1) while also pressing (S2). Switch on the main power by pressing the button (S5). LCD1 M 2, 1-8 shall display: "Next >". The service menu is closed by turning off the main power to the machine.
S4	Press the button (S4) to navigate the menu system step by step.
S3	Press the button (S3) to access the machine information and any fault codes. All error messages are erased by a total reset.
S4	Press (S4) to save the setting and continue to the next menu step.
START	Press (S2) to exit the service menu.

Menu step/Turn/Push	LCD	Comments/instructions
S4		
Most recent fault	Date code control unit xxxx	Shows the date code (year/week) of control unit
	Software xxx	Shows the software version
S3	3 FAIL. xxxx	Shows most recent fault
	2 FAIL. xxxx	Shows second most recent fault (fault other than most recent)
	1 FAIL. xxxx	Shows third most recent fault (fault other than two most recent)
S4		
Diagnostics	Testing	No component tested
	Test Valve A: XXX	Mixer valve and inlet valve on (1 second delay between mixer valve and inlet valve), a pulse meter shows the water intake volume as a number of pulses (XXX)
	Test Valve B: XXX	Inlet valve on (1 second delay), a pulse meter shows the water intake volume as a number of pulses (XXX)
	Testing Salt	Salt valve on
S3	Testing Dispenser	Combi dispenser on
	Testing Circ: XXV	Circulation pump on and the spray arm diverter (if available) shall alternate between positions 1 and 3 every 30 seconds, turbidity (XX)in volts
	Testing Heat: XX°C	Circulation pump and heater on - max. 75°C (167°F), temperature shown in °C or °F depending on the machine setting.
	Testing Fan: XXXX	Fan and Wax motor on, humidity (XXXX Hz)
	Testing Drain: XXV	Drain pump on, pressure sensor value (XX) i volts
S4		

Service menu

DW90.3 cont.



Menu step/Turn/Push	LCD	Comments/instructions
Water intake	Water volume 0	Normal water intake, default setting
	Water volume +5%	Water intake increases by +5%
	Water volume +10%	Water intake increases by +10%
	Water volume +15%	Water intake increases by +15%
	Water volume Time 0	Time, flow meter switched off, intake time: pulse value x 0.068 [s]
S3	Water volume Time +5%	Time-controlled water intake increases by +5%
	Water volume Time +10%	Time-controlled water intake increases by +10%
	Water volume Time +15%	Time-controlled water intake increases by +15%
S4		
LCD contrast	Contrast 00	LCD contrast 0, default setting
	Contrast +1	LCD contrast +1
S3	Contrast +2	LCD contrast +2
	Contrast -1	LCD contrast -1
S4		
TDE	Turbo Drying on	Turbo Drying Express on, default setting
S3	Turbo Drying off	Turbo Drying Express off
S4		
Fan sequence	Fan 1 on	Fan works in sequence during the wash cycle, not in normal program, default setting
S3	Fan 2 on	Fan works in sequence during the wash cycle, even during normal program
	Fan off	No fan sequence during program. Dries the load.
S4		
DUO	DUO off	DUO off, default setting
S3	DUO on	DUO on, to activate Sani, Pots & Pans
S4		
Region	Region EU	Region Europe (as well as China and Japan), default setting
	Region US	Region USA (as well as Taiwan)
S3	Region AU	Region Australia
S4		

Settings

User settings are is described in the machine's operating instructions.

DW90.3 - Total reset

To reset the machine to its factory settings.

1. Turn off the main power switch (S5).
2. Wait at least 5 seconds.
3. Press and hold the program and menu buttons (S1 and S4).
4. Switch on the main power switch (S5).
5. Release the program and menu buttons (S1 and S4).

The LCD display backlight flashes during the reset process. The machine will reset various settings, although not water hardness, language, variant and intake volume. The machine detects the presence of a turbidity sensor, a pressure sensor, a humidity sensor and a spray arm diverter. The machine then automatically returns to the main menu.

DW90.2 - Store program (in shops, at trade shows etc.)

Start by power off/on by plug. Press within 3 secounds (T1) and T3).

The status lights (LEDs) change colour every five seconds, switching between blue, red and green. The LCD display backlight remains on constantly.

The store program can be run with the door open or closed.

Quit the store program by power off/on by plug.

DW90.3 - Store program (in shops, at trade shows etc.)

Start by pressing and holding (S4) and then pressing the main power switch (S5).

The status lights (LEDs) change colour every five seconds, switching between blue, red and green. The LCD display backlight remains on constantly.

The store program can be run with the door open or closed.

Quit the store program by pressing the main power switch.

Tools

The following tools are needed to service the DW90 dishwasher:

Torx
T20
T25
T30

Ring spanner/wrench
7 mm
16 mm

Fixed open-end wrench, adjustable wrench, polygrip pliers/slip joint pliers
For cable fasteners, electrical and inlet valve
22 mm

Special tools

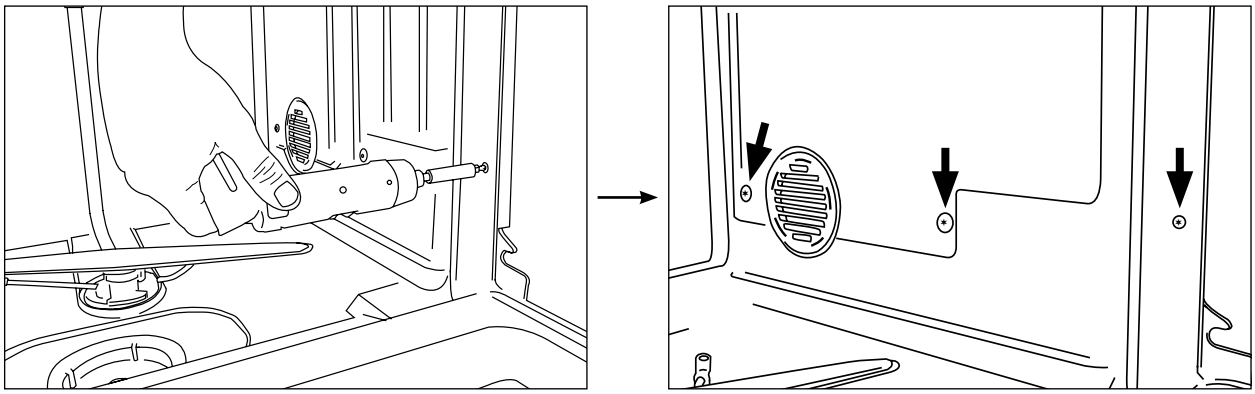
8801339	Universal tool, dishwasher
7281370	Hose clamp pliers, Oetiker
8801424	Universal tool, adapter water softener

PERSONAL NOTES

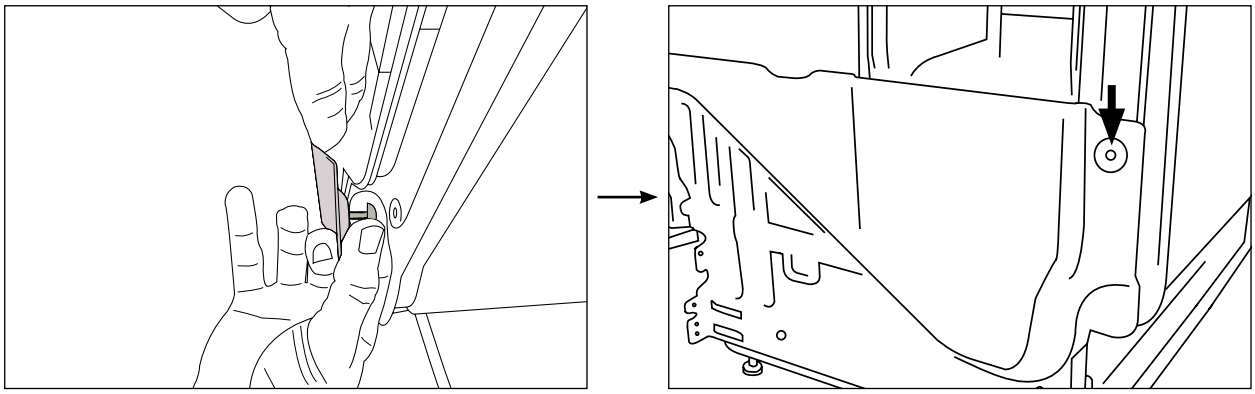
Service and installation

Increased working space during service

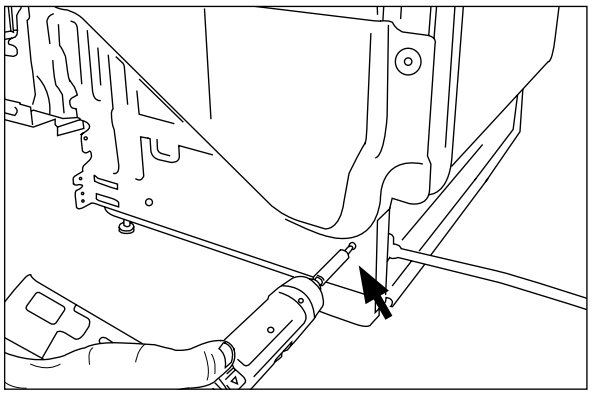
In order to facilitate servicing the machine you can open up the motor compartment by freeing the cleaning compartment along the rear edge and tipping it forward to create more space to work with.



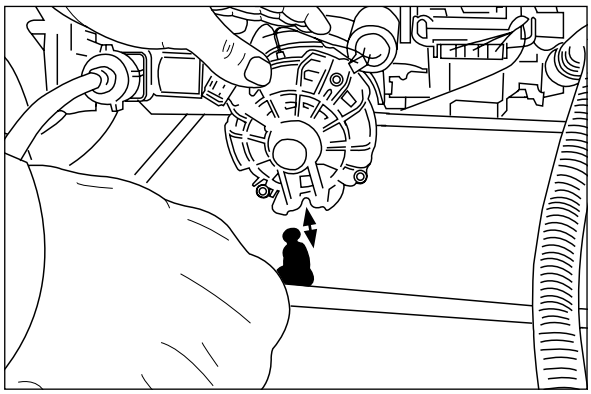
Remove the three screws on each side of the cleaning compartment.



Take one of the M6 screws (with O ring) and insert it in the rear hole on the inside of the base. Repeat for both sides of the machine.

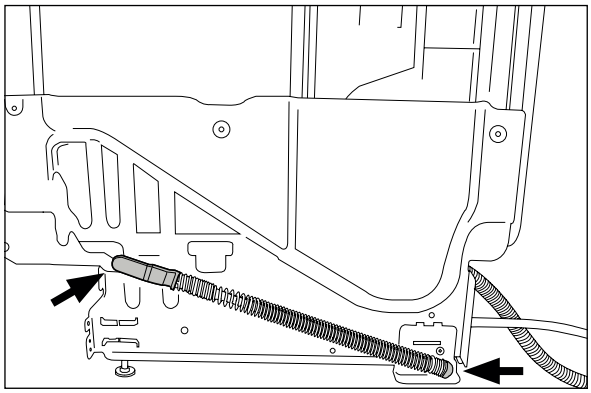


Remove the screw for the air gap.

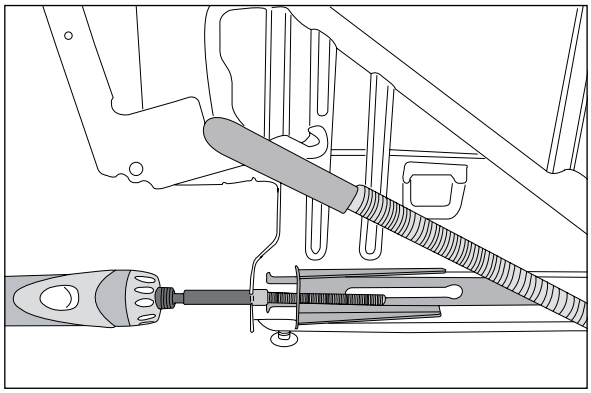


Loosen the circulation pump from the rubber mount.

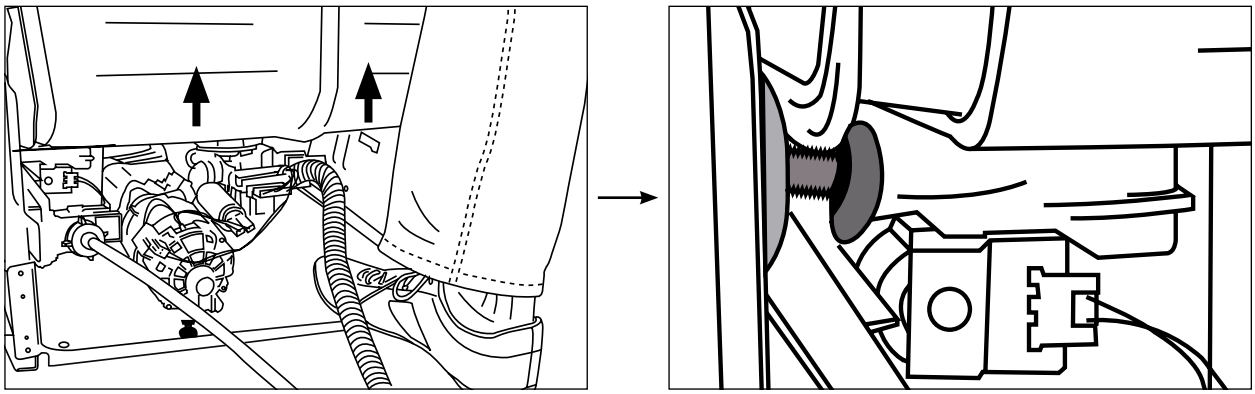
Service and installation



Ensure that both door springs are attached so that the door does not open and tip the machine.



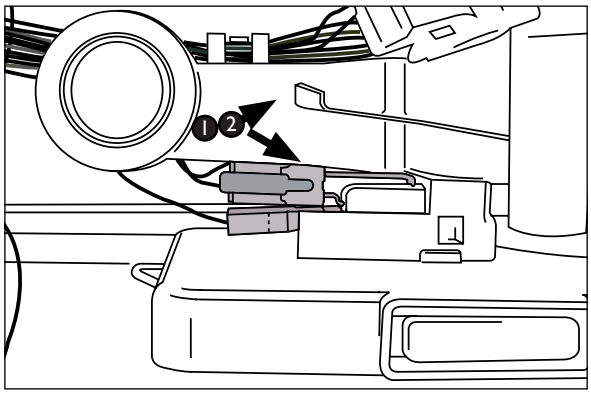
If the machine has door springs that can be adjusted from the front and is fitted with a water softener, the right door spring may need to be fully tensioned. Otherwise the spring mount may fasten in the water softener when the cleaning compartment is lifted.



Put your foot on the base and lift the cleaning compartment up. Hang the cleaning compartment on the two screws previously placed in the rear holes on either side of the machine.

Overflow guard wiring

For service visits where the micro switch for the overflow guard is disconnected it is important that the cables are correctly reattached. If reattached incorrectly the machine will not start. Connect the 2-pin connector (2) to the two upper pins on the micro switch and the single pin connector (1) to the lowest pin.



PERSONAL NOTES

PERSONAL NOTES

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